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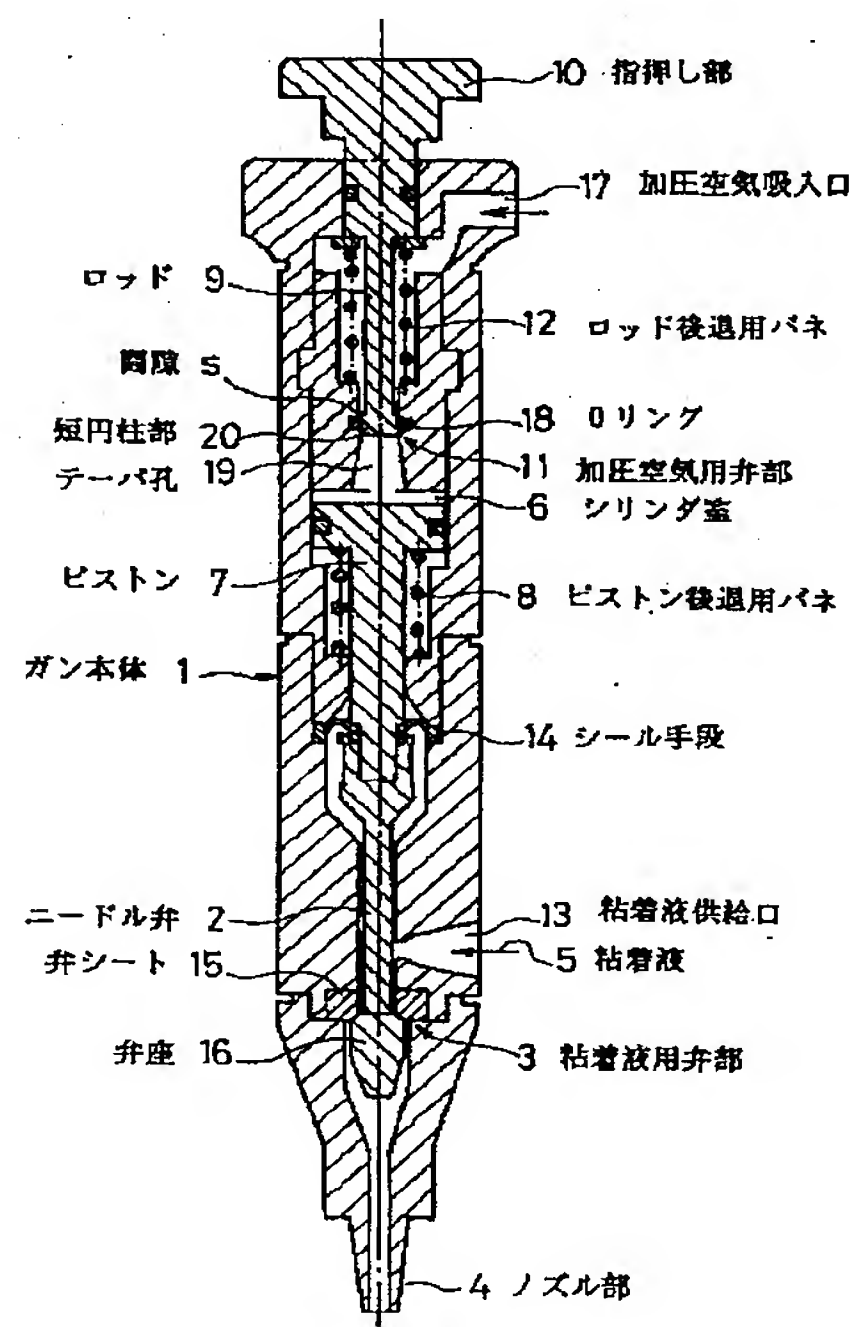
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(54)【考案の名称】 粘着液吐出用手動式ガン

(57)【要約】

【目的】粘着液を吐出時にノズル部が横方向へ位置ズレせず、精度よく塗布作業を行え、かつ吐出停止時に粘着液が直ちに停止し液切れを良くする。

【構成】チューブ状のガン本体1内のニードル弁2を、手動にて加圧空気を介して軸方向へ摺動させ、粘着液用弁部3の開・閉でノズル部4から粘着液5を吐出・停止させる粘着液吐出用手動式ガンにおいて、上記粘着液用弁部3をニードル弁2の後退時に閉止可能に形成し、ニードル弁2の後部に、シリンダ室6内を軸方向へ摺動可能なピストン7を連結して、ピストン後退用バネ8を設け、上記ピストン7の後方に分離したロッド9を設けて、ロッド後退用バネ12を設けるとともに、該ロッド9後端に前方へ押圧用の指押し部10を形成し、該ロッド9とガン本体1との間に、ロッド9前進時に開きシリンダ室6へ加圧空気を流入可能な加圧空気用弁部11を設ける。



## 【実用新案登録請求の範囲】

【請求項 1】 チューブ状のガン本体 1 内のニードル弁 2 を、手動にて加圧空気を介して軸方向へ摺動させ、粘着液用弁部 3 の開・閉でノズル部 4 から粘着液 5 を吐出・停止させるようにした粘着液吐出用手動式ガンにおいて、

上記粘着液用弁部 3 を、ニードル弁 2 の前進時に開口し後退時に閉止可能な形状に形成し、

ニードル弁 2 の後部に、ガン本体 1 のシリンダ室 6 内を軸方向へ摺動可能なピストン 7 を連結して、該ピストン 7 を後方へ押圧するピストン後退用バネ 8 を設け、

上記ピストン 7 の後方に、該ピストン 7 と分離したロッド 9 を設けて、該ロッド 9 を後方へ押圧するロッド後退用バネ 12 を設けるとともに、該ロッド 9 の後端にガン本体 1 後方へ突出した前方押圧用の指押し部 10 を形成し、

該ロッド 9 とガン本体 1 との間に、ロッド 9 の前進時に開いて加圧空気を上記シリンダ室 6 へ流入可能な加圧空気用弁部 11 を設けてなる、粘着液吐出用手動式ガン。

【請求項 2】 ガン本体 1 前部寄りに形成の粘着液供給口 13 より後方位置に、ガン本体 1 とニードル弁 2 またはピストン 7 との間のシール手段 14 としてダイヤフラムを設けた、請求項 1 に記載の粘着液吐出用手動式ガン。

## 【図面の簡単な説明】

【図 1】 本考案に係る粘着液吐出用手動式ガンの全体を

示し、粘着液の吐出を停止時の縦断正面図である。

【図 2】 図 1 の粘着液吐出用手動式ガンの後半部を示し、粘着液を吐出時の拡大縦断正面図である。

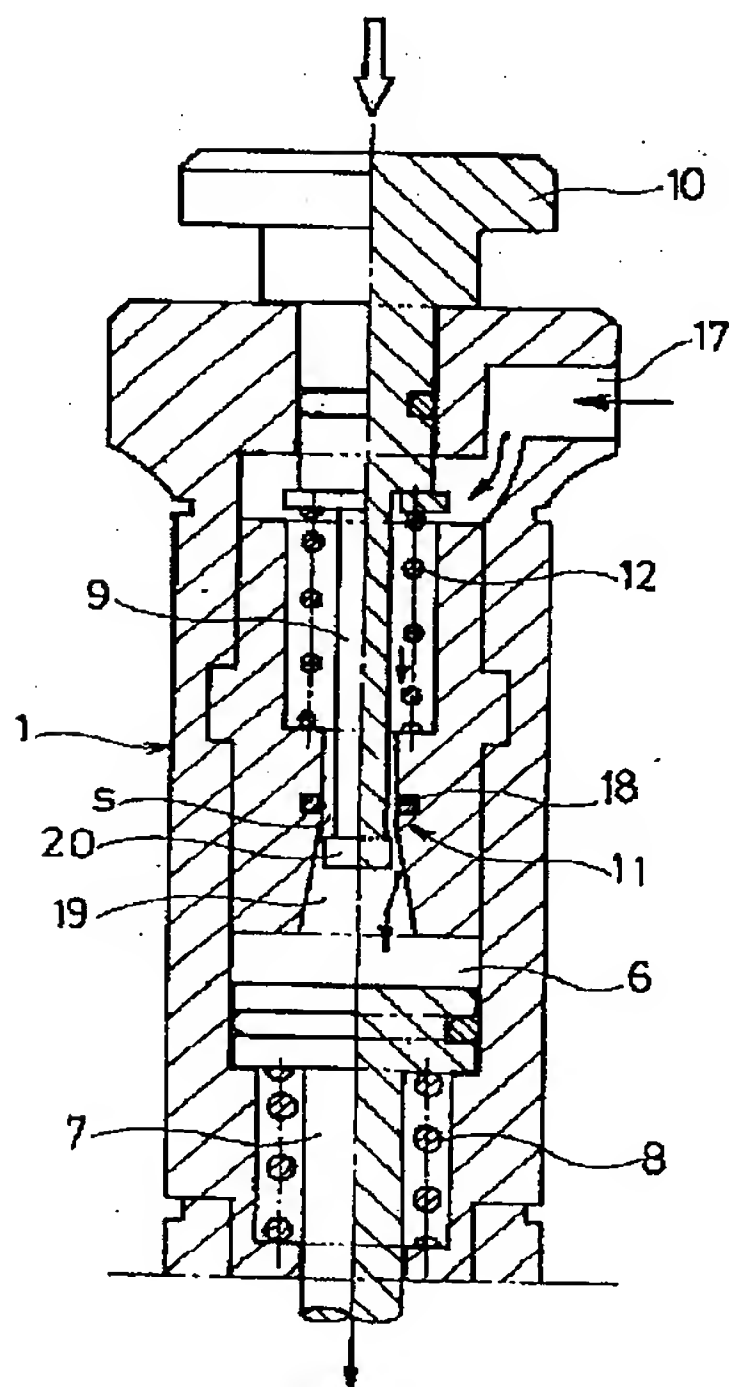
【図 3】 図 1 の粘着液吐出用手動式ガンの前半部を示し、粘着液を吐出時の拡大縦断正面図である。

【図 4】 従来の粘着液吐出用手動式ガンの全体を示し、粘着液の吐出を停止時の縦断正面図である。

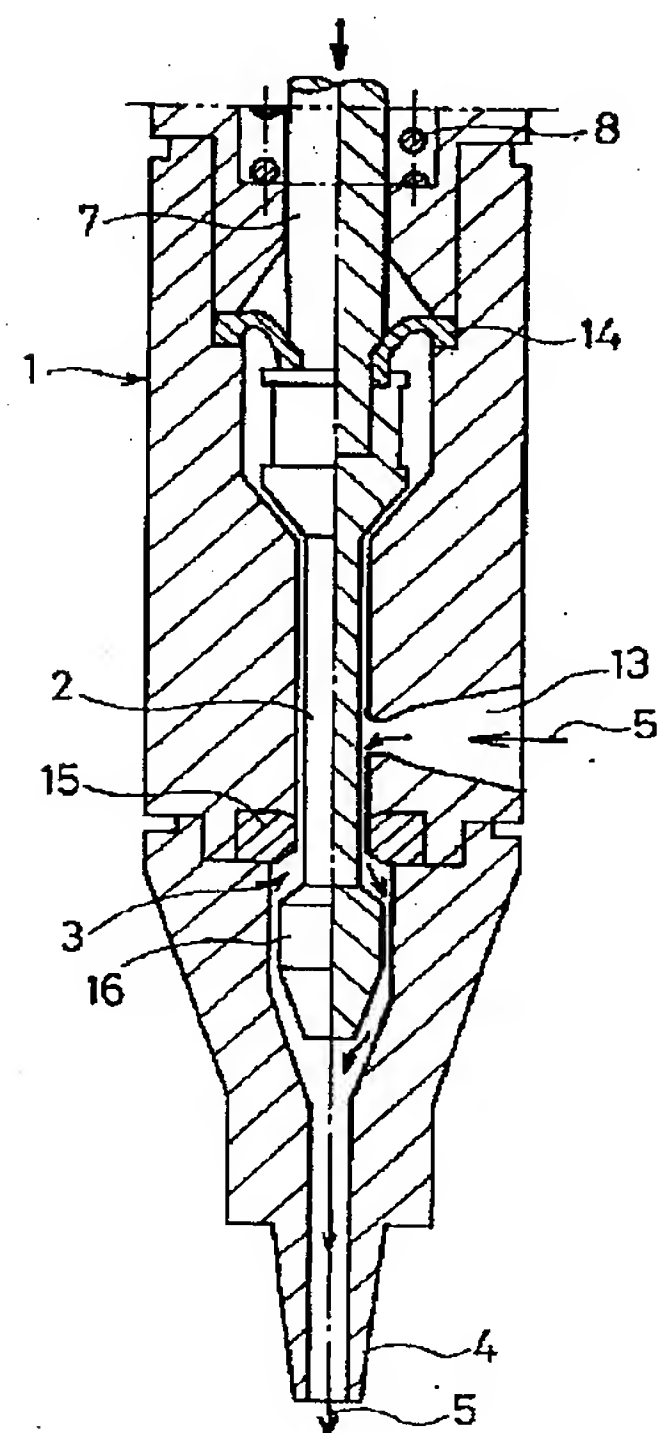
## 【符号の説明】

1-ガン本体	2-ニードル弁	3
4-ノズル部	5-粘着液	6
7-ピストン	8-ピストン後退用バネ	9
10-指押し部	11-加圧空気用弁部	1
12-ロッド後退用バネ	13-粘着液供給口	1
14-シール手段	15-弁シート	1
16-弁座	17-加圧空気吸入口	1
18-リング	19-テーパ孔	2
20-短円柱部	21-操作レバー	s
22-ニードル弁前進用バネ	23-間隙	

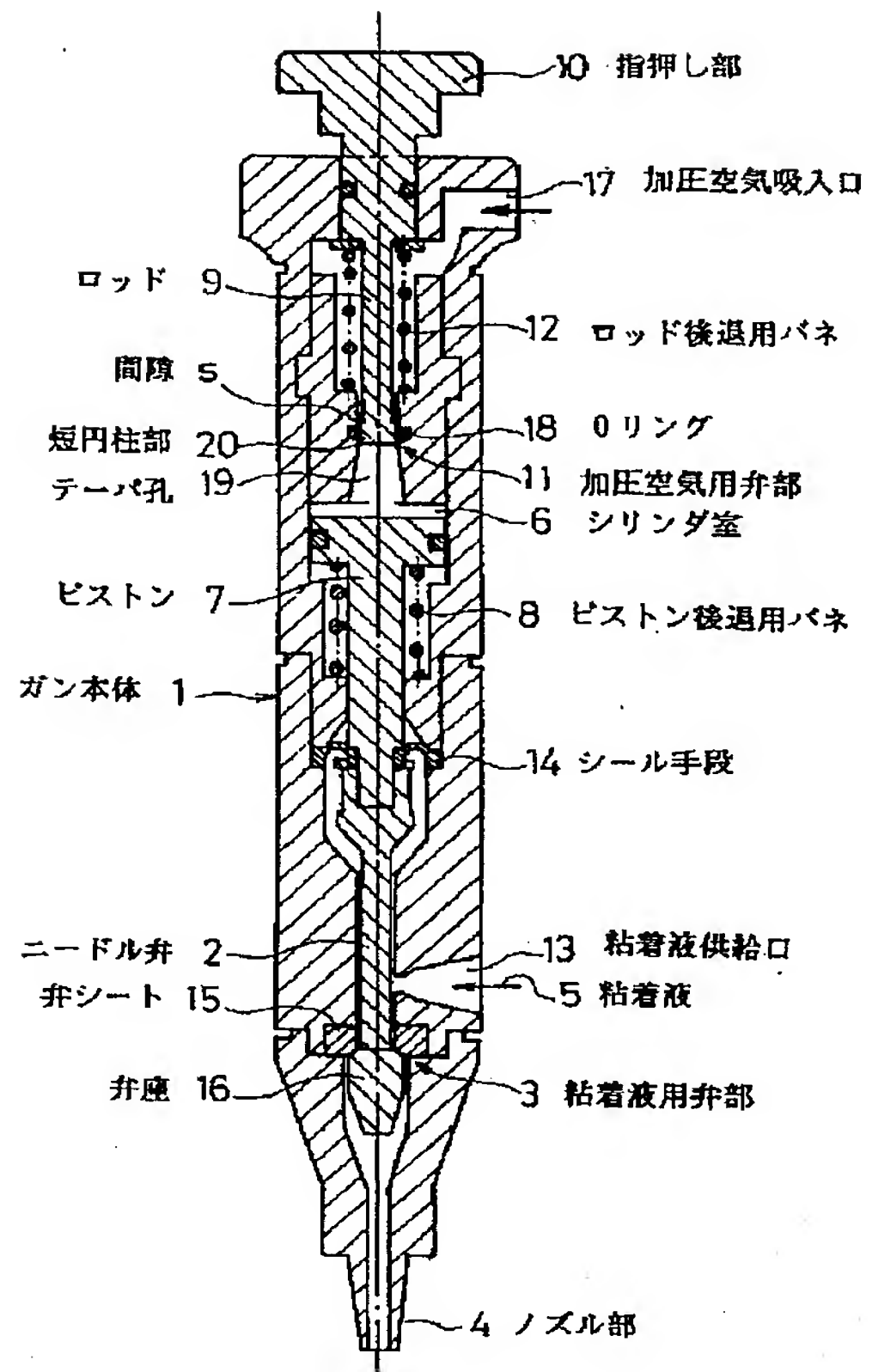
【図 2】



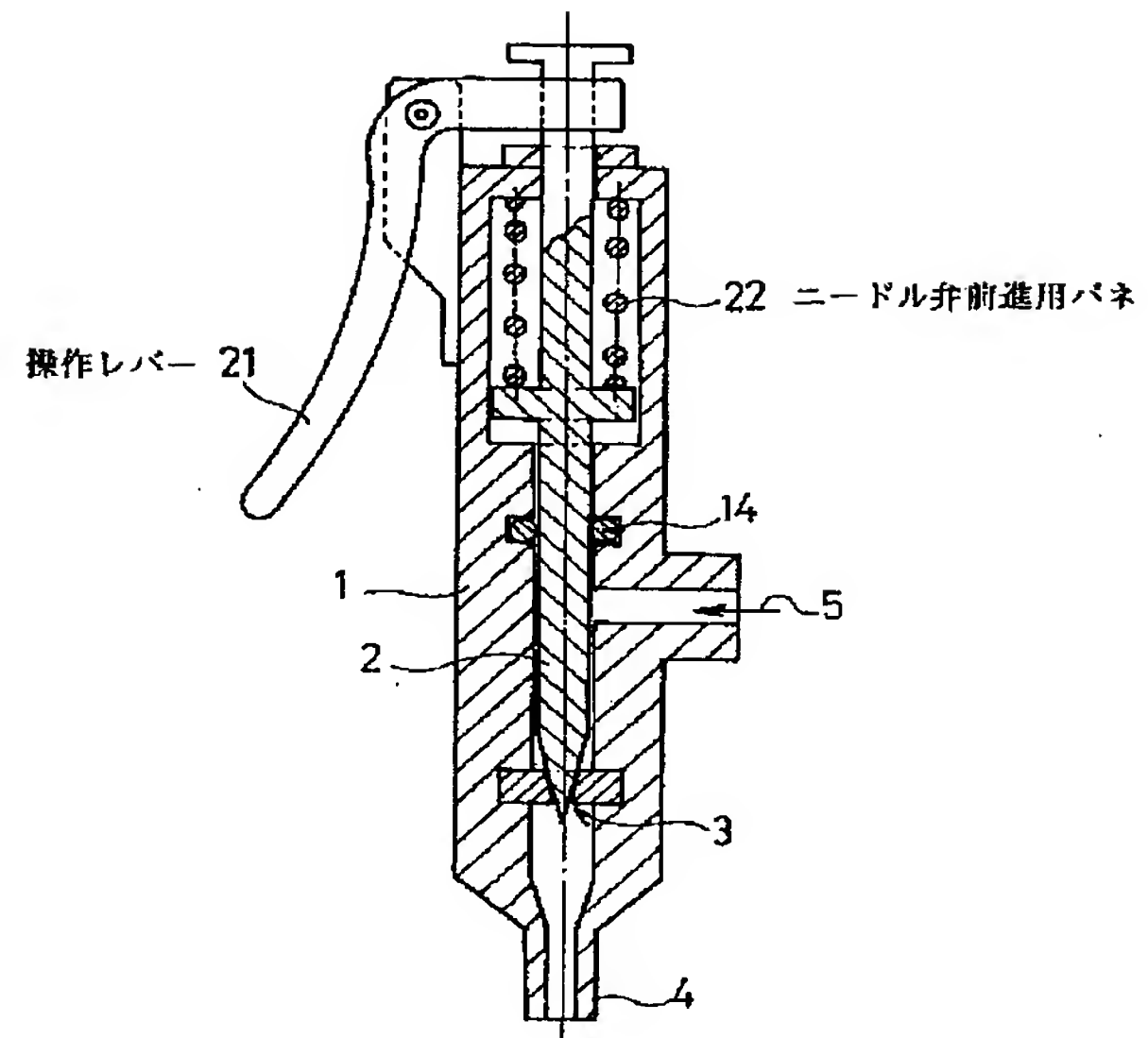
【図 3】



【図1】



【図4】



**【考案の詳細な説明】****【0001】****【産業上の利用分野】**

本考案は粘着液吐出用の手動式ガン、即ち接着剤の如き粘着性のある液を所定箇所へ塗布するため吐出させる手動式のガンに関するものである。

**【0002】****【従来の技術】**

粘着液吐出用の手動式ガンとして従来は、図4で示すものが一般的である。これは、チューブ状のガン本体1内に側部から供給される粘着液5を、ニードル弁前進用バネ22で前進したニードル弁2が粘着液用弁部3を閉じて吐出を停止させ、またガン本体1外側部のテコ式の操作レバー21を握ることで、ニードル弁2を後退させ上記弁部3を開口させてノズル部4から吐出させるものである。

**【0003】****【考案が解決しようとする課題】**

ところが、上記従来の粘着液吐出用手動式ガンでは、ガン本体1外側部の操作レバー21を握った際にガン本体1の軸方向と直角方向に力が加わるので、ガン本体1先端のノズル部4の位置が横方向へズレることになる。そのため、粘着液5を所定箇所へ精度よく塗布することが難しく、熟練者でないと行えなかった。

**【0004】**

またこのガンでは、粘着液5の吐出を停止すべく操作レバー21を握る手を緩めると、上記バネ22の力でニードル弁2が前進して弁部3を閉止するが、その際に弁部3とノズル部4間にあった粘着液5がノズル部4から流れ落ちてしまうことになり、液切れが悪かった。

**【0005】**

なおこのガンでは、ガン本体1とニードル弁2とのシール手段14にOリングを用いているため、該Oリングは摺動するニードル弁2との間で磨耗が早く、耐久性に欠けるという問題点もあった。

**【0006】**

本考案は、上記従来の粘着液吐出用手動式ガンの問題点を解決しようとするも

のである。即ち本考案の目的は、粘着液を吐出時にノズル部が横方向へ位置ズレせず、精度よく塗布作業を行えるとともに、吐出の停止時に粘着液が直ちに停止して液切れを良くし、併せてシール手段の耐久性も増すようにした、粘着液吐出手動式ガンを提供することにある。

#### 【0007】

##### 【課題を解決するための手段】

本考案に係る粘着液吐出手動式ガンは、

チューブ状のガン本体 1 内のニードル弁 2 を、手動にて加圧空気を介して軸方向へ摺動させ、粘着液用弁部 3 の開・閉でノズル部 4 から粘着液 5 を吐出・停止させるようにした粘着液吐出手動式ガンにおいて、

上記粘着液用弁部 3 を、ニードル弁 2 の前進時に開口し後退時に閉止可能な形状に形成し、

ニードル弁 2 の後部に、ガン本体 1 のシリンダ室 6 内を軸方向へ摺動可能なピストン 7 を連結して、該ピストン 7 を後方へ押圧するピストン後退用バネ 8 を設け、

上記ピストン 7 の後方に、該ピストン 7 と分離したロッド 9 を設けて、該ロッド 9 を後方へ押圧するロッド後退用バネ 12 を設けるとともに、該ロッド 9 の後端にガン本体 1 後方へ突出した前方押圧用の指押し部 10 を形成し、

該ロッド 9 とガン本体 1 との間に、ロッド 9 の前進時に開いて加圧空気を上記シリンダ室 6 へ流入可能な加圧空気用弁部 11 を設けてなるものである。

#### 【0008】

上記構成において、粘着液供給口 13 とシリンダ室 6 との中間箇所、ガン本体 1 とニードル弁 2 またはピストン 7 との間のシール手段 14 として、ダイヤフラムを設けておくことが望ましい。

図において、15 はガン本体 1 に形成の弁シート、16 はニードル弁 2 に形成の弁座、17 は加圧空気吸入口、18 は加圧空気用弁部 11 のリングを各々示す。

#### 【0009】

##### 【作用】

イ) まず、本考案に係る粘着液吐出用手動式ガンで、粘着液を塗布しない場合は、ピストン後退用バネ8の力でニードル弁2が後退位置にある。そのため粘着液用弁部3は、ニードル弁2の弁座16がガン本体1の弁シート15に圧接して閉止されており、粘着液供給口13からガン本体1内へ供給された粘着液5はノズル部4へ流出しない。なおこの際、ロッド9もロッド後退用バネ12の力で後退位置にあり、加圧空気用弁部11も閉止されているため、加圧空気吸入口17から吸入された加圧空気も、シリンダ室6へ流入しない(図1参照)。

【0010】

ロ) 次に、この粘着液吐出用手動式ガンで粘着液を吐出・塗布する場合は、ガン本体1を握った状態で後方へ突出したロッド9後端の指押し部10を、指で少し押し込めばよい。

【0011】

これでロッド9が少し前進し、該ロッド2後退時に閉止していた加圧空気用弁部11が開くことになるので、加圧空気吸入口17からガン本体1内へ流入していた加圧空気が、該弁部11を通過してシリンダ室6へ流入し、この加圧空気により、シリンダ室6内のピストン7がピストン後退用バネ8の力に抗して前進する(図2参照)。このピストン7の前進により、該ピストン7と一体のニードル弁2が前進し、粘着液用弁部3では弁座16が弁シート15から離れることになり、該弁部3が開口する。そのため、ガン本体1内へ供給されている粘着液5が該弁部3を通過し、先端のノズル部4から吐出されることになる(図3参照)。

【0012】

上記の如く粘着液を吐出させる場合に、その操作はロッド9後端の指押し部10をガン本体1の軸方向前方へ指で少し押し込むことである。そのためこのガンでは、従来のガン本体外側部の操作レバーをガン本体の軸方向と直角方向へ握るものと異なり、先端のノズル部4が横方向へズレることが無くなり、粘着液5は所定箇所へ精度よく塗布される。

【0013】

ハ) この粘着液吐出用手動式ガンで粘着液の吐出を一時停止させる場合は、ロッド9後端の指押し部10を押す力を緩めればよい。



これで、ロッド9がロッド後退用バネ12の力で少し後退するので、開いていた加圧空気用弁部11が開じることになり、シリンダ室6へ加圧空気が流入しなくなる。そのため、ピストン後退用バネ8の力によりピストン7が後退し、該ピストン7と一体のニードル弁2も後退して座部16が弁シート15に圧接するので、粘着液用弁部3が閉止することになり、ノズル部4から粘着液5の吐出が停止する。

#### 【0014】

上記の粘着液の吐出を停止させる場合に、粘着液用弁部3の閉止はニードル弁2の後退による弁座16の後退で行われる。この弁座16の後退により、粘着液用弁部3とノズル部4間に弁座16の断面積に応じた負圧が生じるため、この負圧によってノズル部4から粘着液5が流れ落ちるのを防止することになり、吐出が直ちに停止して液切れがよくなる。

#### 【0015】

二) なお、粘着液供給口13とシリンダ室6との間の位置に、ガン本体1とニードル弁2またはピストン7との間のシール手段14として、上記の如くダイヤフラムを設けてあれば、摺動するニードル弁2に対してシールが完全になるとともに、従来のリングのような磨耗がなく耐久性が向上する。

#### 【0016】

##### 【実施例】

図1ないし図3で示す実施例において、ガン本体1は、後部寄りのシリンダチューブ部分と、前部寄りのバルブチューブ部分と、先端部のノズル部分等に分割形成したものを、接続して一体物としてある。

#### 【0017】

他方、ガン本体1内を摺動する部分は、ニードル弁2とピストン7とは別体形成して連結してあるが、後端に指押え部10をもつロッドは、上記の如くピストン7と分離して設けておく。

#### 【0018】

加圧空気用弁11は、ガン本体1内のシリンダ室6の後側にリング18を設けるとともに、シリンダ室6寄りで大径となるテーパ孔19を形成し、他方ロッ

ド9の前端寄りに上記リング18に当接するやや大径の短円柱部20を形成してある。この作動状態は、ロッド9が後退時には上記短円柱部20がリング18へ当接して該加圧空気用弁11を閉止している（図1参照）。ロッド9が前進時には大径短円柱部20がリング18の位置から外れるので、ロッド9外周面とリング17内周面との間に間隙sが生じて該加圧空気用弁11が開くことになり、加圧空気は該弁11を通過しテーパ孔19を経てシリンダ室6へ流入し、ピストン7を前進させる（図2参照）。

#### 【0019】

##### 【考案の効果】

以上で明らかな如く、本考案に係る粘着液吐出用手動式ガンは、従来のものと異なり、粘着液を吐出時にノズル部が横方向へ位置ずれせず、精度よく塗布作業を行うことができるとともに、吐出を停止時に粘着液が直ちに停止して液切れを良くすることができる。なお併せて、シール手段の耐久性も増すことも可能になるものである。

#### 【0021】

即ち、従来のこの種のガンでは、粘着液吐出時の操作がガン本体外側部の操作レバーを握るため、ガン本体の軸方向と直角の方向へ力が加わり、先端のノズル部が横方向へズレ易く所定箇所へ精度よく粘着液を塗布することが難しかった。

また粘着液の吐出停止時に弁部を閉止させても、弁部とノズル部間にあった粘着液が流れ落ちてしまい液切れが悪かった。さらにガン本体と摺動するニードル弁間のシール手段にリングを用いているため、該リングの磨耗が早かった。

#### 【0022】

これに対して、本考案の粘着液吐出用手動式ガンは、粘着液を吐出時の操作が上記の如く、ガン本体の後方へ突出したロッド後端の指押し部を軸方向前方へ指で少し押すものであるため、ノズル部の横方向へのズレを無くすことができ、粘着液を所定箇所へ精度よく塗布できる。

#### 【0023】

また本考案の粘着液吐出用手動式ガンでは、粘着液の吐出を一時停止する場合に、上記の如くニードル弁の後退により弁座が後退して粘着液用弁部が閉止され



る。そのため、該弁部とノズル部との間に負圧が生じるので、ノズル部からの粘着液の流れ落ちが防止でき、液切れをよくできる。

【0024】

なお図示例の如く、ガン本体とニードル弁またはピストンとの間のシール手段にダイヤフラムを用いてあれば、従来のＯリングと異なり摺動するニードル弁に対してシールが完全であり、かつ磨耗もなく耐久性を向上できる。

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CLAIMS

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[Utility model registration claim]

[Claim 1] Slide the needle valve 2 within the tube-like gun body 1 to shaft orientations through pressurization air manually, and it is set from the nozzle section 4 to the regurgitation [adhesion liquid 5] and the manual system gun for adhesion liquid regurgitation which was made to stop with open and the close one of the valve portion 3 for adhesion liquid. Carry out opening of the above-mentioned valve portion 3 for adhesion liquid at the time of advance of a needle valve 2, form it in the configuration which can be stopped at the time of retreat, and the piston 7 which can slide to shaft orientations is connected with the posterior part of a needle valve 2 for the inside of the cylinder room 6 of the gun body 1. While forming the spring 8 for piston retreat which presses this piston 7 back, forming this piston 7 and the separated rod 9 behind the above-mentioned piston 7 and forming the spring 12 for rod retreat which presses this rod 9 back The manual system gun for adhesion liquid regurgitation which forms the finger push section 10 for front press projected to gun body 1 back to the back end of this rod 9, opens between this rod 9 and the gun body 1 at the time of advance of a rod 9, and comes to establish pressurization air the valve portion 11 for pressurization air which can flow into the above-mentioned cylinder room 6.

[Claim 2] The manual system gun for adhesion liquid regurgitation according to claim 1 which formed diaphragm in the back location as a seal means 14 between the gun body 1, a needle valve 2, or a piston 7 from the adhesion liquid feed hopper 13 of formation to gun body 1 anterior-part approach.

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the gun of the manual system made to breathe out in order to apply the manual system gun for adhesion liquid regurgitation, i.e., liquid with the adhesiveness like adhesives, to a predetermined part.

[0002]

[Description of the Prior Art]

Conventionally, what is shown by drawing 4 is common as a manual system gun for adhesion liquid regurgitation. This is the needle valve 2 which moved forward the adhesion liquid 5 supplied from a flank in the tube-like gun body 1 with the spring 22 for needle valve advance closing the valve portion 3 for adhesion liquid, and stopping the regurgitation, and grasping the control lever 21 of the TEKO type of gun body 1 lateral part, it retreats a needle valve 2, carries out opening of the above-mentioned valve portion 3, and is made to breathe out from the nozzle section 4.

[0003]

[Problem(s) to be Solved by the Device]

However, from the above-mentioned conventional manual system gun for adhesion liquid regurgitation, since the force is added in the shaft orientations and the direction of a right angle of the gun body 1 when the control lever 21 of gun body 1 lateral part is grasped, the location of the nozzle section 4 at gun body 1 tip will shift to a longitudinal direction. therefore, the thing for which adhesion liquid 5 is applied to a predetermined part with a sufficient precision -- hard -- unless it was an expert, it was not able to carry out.

[0004]

Moreover, although the needle valve 2 moved forward by the force of the above-mentioned spring 22 and the valve portion 3 was stopped with this gun when the hand which grasps a control lever 21 that the regurgitation of adhesion liquid 5 should be stopped was loosened, a valve portion 3 and the adhesion liquid 5 for which it was enough nozzle section 4 will flow and fall from the nozzle section 4 in that case, and the liquid piece was bad.

[0005]

In addition, from this gun, since the O ring was used for the seal means 14 of the gun body 1 and a needle valve 2, this O ring also had the trouble that wear lacked in endurance early between the needle valves 2 which slide.

[0006]

This design tends to solve the trouble of the above-mentioned conventional manual system gun for adhesion liquid regurgitation. That is, the purpose of this design be to offer the manual system gun for adhesion liquid regurgitation adhesion liquid stop immediately and made it whose endurance of a seal means also improve and increase a liquid piece collectively at the time of a halt of the regurgitation while the nozzle section do not carry out location gap of the adhesion liquid to a longitudinal direction at the time of the regurgitation but it can perform spreading with a sufficient precision.

[0007]

## [Means for Solving the Problem]

Manual system gun for adhesion liquid regurgitation concerning this design The needle valve 2 within the tube-like gun body 1 Make it slide to shaft orientations through pressurization air manually, and adhesion liquid 5 is set from the nozzle section 4 to the regurgitation and the manual system gun for adhesion liquid regurgitation which was made to stop with open and the close one of the valve portion 3 for adhesion liquid. Opening of the valve portion 3 for the above-mentioned adhesion liquid is carried out at the time of advance of a needle valve 2, and it is formed in the configuration which can be stopped at the time of retreat. The piston 7 which can slide to shaft orientations is connected with the posterior part of a needle valve 2 for the inside of the cylinder room 6 of the gun body 1. The spring 8 for piston retreat which presses this piston 7 back is formed. While forming this piston 7 and the separated rod 9 behind the above-mentioned piston 7 and forming the spring 12 for rod retreat which carries out the back HE press of this rod 9 The finger push section 10 for front press projected to gun body 1 back to the back end of this rod 9 is formed. Between this rod 9 and the gun body 1, it opens at the time of advance of a rod 9, and comes to prepare pressurization air in it the valve portion 11 for pressurization air which can flow into the above-mentioned cylinder room 6.

[0008]

In the above-mentioned configuration, it is desirable to form diaphragm in the middle part of the adhesion liquid feed hopper 13 and the cylinder room 6 as a seal means 14 between the gun body 1, a needle valve 2, or a piston 7.

In drawing, in 15, the valve seat of formation and 17 show pressurization air-suction-system opening to a needle valve 2, and, as for the valve sheet of formation, and 16, 18 shows the O ring of the valve portion 11 for pressurization air to the gun body 1 respectively.

[0009]

## [Function]

b) When not applying adhesion liquid probably from the manual system gun for adhesion liquid regurgitation concerning this design, a needle valve 2 is in a retreat location by the force of the spring 8 for piston retreat. Therefore, the valve seat 16 of a needle valve 2 carries out the pressure welding of the valve portion 3 for adhesion liquid to the valve sheet 15 of the gun body 1, the closedown is carried out and the adhesion liquid 5 by which HE supply within the gun body 1 was carried out does not flow out of the adhesion liquid feed hopper 13 into the nozzle section 4. In addition, a rod 9 is also in a retreat location by the force of the spring 12 for rod retreat in this case, and since the closedown also of the valve portion 11 for pressurization air is carried out, the pressurization air inhaled from the pressurization air-suction-system opening 17 does not flow into the cylinder room 6, either (refer to drawing 1 ).

[0010]

b) Next, what is necessary is just to push in with a finger the finger push section 10 of the rod 9 back end which carried out the back HE protrusion where the gun body 1 is grasped from this manual system gun for adhesion liquid regurgitation, when applying, the regurgitation [ adhesion liquid ], for a while.

[0011]

Since the valve portion 11 for pressurization air which the rod 9 moved forward for a while now, and had been stopped at the time of this rod 2 retreat will open, the pressurization air which was flowing into the gun body 1 from the pressurization air-suction-system opening 17 passes this valve portion 11, and flows into the cylinder room 6, and with this pressurization air, the piston 7 in the cylinder room 6 resists the force of the spring 8 for piston retreat, and moves forward (refer to drawing 2 ). By advance of this piston 7, this piston 7 and the needle valve 2 of one move forward, by the valve portion 3 for adhesion liquid, a valve seat 16 will separate from the valve sheet 15, and this valve portion 3 carries out opening. Therefore, the adhesion liquid 5 currently supplied into the gun body 1 will pass this valve portion 3, and will be breathed out from the nozzle section 4 at a tip (refer to drawing 3 ).

[0012]

When making adhesion liquid breathe out like the above, the actuation is stuffing the finger push section 10 of the rod 9 back end into the shaft-orientations front of the gun body 1 for a while



with a finger. Therefore, from this gun, unlike what grasps the control lever of the conventional gun body lateral part in the shaft orientations and the direction of a right angle of a gun body, the nozzle section 4 of longitudinal direction HEZURE \*\*\*\*\* at a tip is lost, and adhesion liquid 5 is applied to a predetermined part with a sufficient precision.

[0013]

c) What is necessary is just to loosen the force of pushing the finger push section 10 of the rod 9 back end, when making the regurgitation of adhesion liquid halt from this manual system gun for adhesion liquid regurgitation.

the valve portion 11 for pressurization air which was being opened now since the rod 9 retreated for a while by the force of the spring 12 for rod retreat -- \*\*\*\*\* -- it becomes things and pressurization air stops flowing into the cylinder room 6. Therefore, since a piston 7 retreats according to the force of the spring 8 for piston retreat, this piston 7 and the needle valve 2 of one also retreat and the seat 16 carries out a pressure welding to the valve sheet 15, the valve portion 3 for adhesion liquid will stop, and the regurgitation of adhesion liquid 5 stops from the nozzle section 4.

[0014]

When stopping the regurgitation of the above-mentioned adhesion liquid, the closedown of the valve portion 3 for adhesion liquid is performed by retreat of the valve seat 16 by retreat of a needle valve 2. By retreat of this valve seat 16, since the negative pressure according to the cross section of a valve seat 16 arises between the valve portion 3 for adhesion liquid, and the nozzle section 4, it will be prevented that adhesion liquid 5 flows and falls from the nozzle section 4 with this negative pressure, the regurgitation stops immediately, and a liquid piece becomes good.

[0015]

While a seal becomes perfect to the needle valve 2 which is NI and which will slide at it if diaphragm is formed like the above as a seal means 14 between the gun body 1, a needle valve 2, or a piston 7 in the location between the adhesion liquid feed hopper 13 and the cylinder room 6, there is no wear like the conventional O ring, and endurance improves.

[0016]

[Example]

In the example shown by drawing 1 thru/or drawing 3, the gun body 1 connects to the cylinder-tube part of posterior part approach, the bulb tube part of anterior part approach, the nozzle part of a point, etc. what carried out division formation, and has really used it as the object.

[0017]

On the other hand, although a needle valve 2 and a piston 7 carry out another object formation and the part which slides on the inside of the gun body 1 is connected, like the above, it dissociates with a piston 7 and the rod which has the finger presser-foot section 10 in the back end is prepared.

[0018]

the valve 11 for pressurization air forms the taper hole 19 which comes together cylinder room 6, comes out, and serves as a major diameter, and contacts the front end approach of the another side rod 9 at above-mentioned O ring 18 while it forms O ring 18 in the backside [ the cylinder room 6 within the gun body 1 ] -- the short cylinder section 20 of a major diameter is formed a little. At the time of retreat, the above-mentioned short cylinder section 20 contacted [ the rod 9 ] to O ring 18, and this operating state has stopped this valve 11 for pressurization air (refer to drawing 1). Since the major-diameter short cylinder section 20 separates [ a rod 9 ] from the location of O ring 18 at the time of advance, Gap s will be generated between rod 9 peripheral face and O ring 17 inner skin, this valve 11 for pressurization air will open, and pressurization air passes this valve 11, flows into the cylinder room 6 through the taper hole 19, and advances a piston 7 (refer to drawing 2).

[0019]

[Effect of the Device]

While the nozzle section cannot carry out the location gap of the adhesion liquid to a longitudinal direction at the time of the regurgitation unlike the conventional thing but being able to perform

spreading with a sufficient precision, adhesion liquid can stop the regurgitation immediately at the time of a halt, and the manual system gun for adhesion liquid regurgitation which starts this design so that above clearly can improve a liquid piece. In addition, it also enables the endurance of a seal means to combine and to increase.

[0021]

That is, in order that the actuation at the time of the adhesion liquid regurgitation might grasp the control lever of a gun body lateral part from this conventional kind of gun, it was difficult to apply adhesion liquid to a predetermined part with a sufficient precision that the force is added in the shaft orientations of a gun body, and the direction of a right angle, and the nozzle section at a tip tends to shift to a longitudinal direction.

Moreover, even if it carried out the closedown of the valve portion at the time of a regurgitation halt of adhesion liquid, the adhesion liquid which was between a valve portion and the nozzle section flowed and fell, and the liquid piece was bad. Since the O ring was furthermore used for the seal means between a gun body and the needle valve which slides, wear of this O ring was early.

[0022]

On the other hand, since the manual system gun for adhesion liquid regurgitation of this design is what pushes on the shaft-orientations front a little the finger push section of the rod back end to which the actuation at the time of the regurgitation projected adhesion liquid behind the gun body like the above with a finger, it can lose gap in the longitudinal direction of the nozzle section, and can apply adhesion liquid to a predetermined part with a sufficient precision.

[0023]

Moreover, from the manual system gun for adhesion liquid regurgitation of this design, when halting the regurgitation of adhesion liquid, like the above, a valve seat retreats by retreat of a needle valve, and the closedown of the valve portion for adhesion liquid is carried out. Therefore, since negative pressure arises between this valve portion and the nozzle section, the flow omission of the adhesion liquid from the nozzle section can be prevented, and a liquid piece can improve.

[0024]

In addition, if diaphragm is used for the seal means between a gun body, a needle valve, or a piston like the example of illustration, to the needle valve which slides unlike the conventional O ring, a seal is perfect, and there is also no wear, and endurance can be improved.

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[Translation done.]



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TECHNICAL FIELD

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[Industrial Application]

This design is related with the gun of the manual system made to breathe out in order to apply the manual system gun for adhesion liquid regurgitation, i.e., liquid with the adhesiveness like adhesives, to a predetermined part.

[0002]

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PRIOR ART

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[Description of the Prior Art]

Conventionally, what is shown by drawing 4 is common as a manual system gun for adhesion liquid regurgitation. This is the needle valve 2 which moved forward the adhesion liquid 5 supplied from a flank in the tube-like gun body 1 with the spring 22 for needle valve advance closing the valve portion 3 for adhesion liquid, and stopping the regurgitation, and grasping the control lever 21 of the TEKO type of gun body 1 lateral part, it retreats a needle valve 2, carries out opening of the above-mentioned valve portion 3, and is made to breathe out from the nozzle section 4.  
[0003]

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## EFFECT OF THE INVENTION

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### [Effect of the Device]

While the nozzle section cannot carry out the location gap of the adhesion liquid to a longitudinal direction at the time of the regurgitation unlike the conventional thing but being able to perform spreading with a sufficient precision, adhesion liquid can stop the regurgitation immediately at the time of a halt, and the manual system gun for adhesion liquid regurgitation which starts this design so that above clearly can improve a liquid piece. In addition, it also enables the endurance of a seal means to combine and to increase.

#### [0021]

That is, in order that the actuation at the time of the adhesion liquid regurgitation might grasp the control lever of a gun body lateral part from this conventional kind of gun, it was difficult to apply adhesion liquid to a predetermined part with a sufficient precision that the force is added in the shaft orientations of a gun body, and the direction of a right angle, and the nozzle section at a tip tends to shift to a longitudinal direction.

Moreover, even if it carried out the closedown of the valve portion at the time of a regurgitation halt of adhesion liquid, the adhesion liquid which was between a valve portion and the nozzle section flowed and fell, and the liquid piece was bad. Since the O ring was furthermore used for the seal means between a gun body and the needle valve which slides, wear of this O ring was early.

#### [0022]

On the other hand, since the manual system gun for adhesion liquid regurgitation of this design is what pushes on the shaft-orientations front a little the finger push section of the rod back end to which the actuation at the time of the regurgitation projected adhesion liquid behind the gun body like the above with a finger, it can lose gap in the longitudinal direction of the nozzle section, and can apply adhesion liquid to a predetermined part with a sufficient precision.

#### [0023]

Moreover, from the manual system gun for adhesion liquid regurgitation of this design, when halting the regurgitation of adhesion liquid, like the above, a valve seat retreats by retreat of a needle valve, and the closedown of the valve portion for adhesion liquid is carried out. Therefore, since negative pressure arises between this valve portion and the nozzle section, the flow omission of the adhesion liquid from the nozzle section can be prevented, and a liquid piece can improve.

#### [0024]

In addition, if diaphragm is used for the seal means between a gun body, a needle valve, or a piston like the example of illustration, to the needle valve which slides unlike the conventional O ring, a seal is perfect, and there is also no wear, and endurance can be improved.

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## TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Device]

However, from the above-mentioned conventional manual system gun for adhesion liquid regurgitation, since the force is added in the shaft orientations and the direction of a right angle of the gun body 1 when the control lever 21 of gun body 1 lateral part is grasped, the location of the nozzle section 4 at gun body 1 tip will shift to a longitudinal direction. therefore, the thing for which adhesion liquid 5 is applied to a predetermined part with a sufficient precision -- hard -- unless it was an expert, it was not able to carry out.

[0004]

Moreover, although the needle valve 2 moved forward by the force of the above-mentioned spring 22 and the valve portion 3 was stopped with this gun when the hand which grasps a control lever 21 that the regurgitation of adhesion liquid 5 should be stopped was loosened, a valve portion 3 and the adhesion liquid 5 for which it was enough nozzle section 4 will flow and fall from the nozzle section 4 in that case, and the liquid piece was bad.

[0005]

In addition, from this gun, since the O ring was used for the seal means 14 of the gun body 1 and a needle valve 2, this O ring also had the trouble that wear lacked in endurance early between the needle valves 2 which slide.

[0006]

This design tends to solve the trouble of the above-mentioned conventional manual system gun for adhesion liquid regurgitation. That is, the purpose of this design be to offer the manual system gun for adhesion liquid regurgitation adhesion liquid stop immediately and made it whose endurance of a seal means also improve and increase a liquid piece collectively at the time of a halt of the regurgitation while the nozzle section do not carry out location gap of the adhesion liquid to a longitudinal direction at the time of the regurgitation but it can perform spreading with a sufficient precision.

[0007]

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MEANS

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[Means for Solving the Problem]

Manual system gun for adhesion liquid regurgitation concerning this design The needle valve 2 within the tube-like gun body 1 Make it slide to shaft orientations through pressurization air manually, and adhesion liquid 5 is set from the nozzle section 4 to the regurgitation and the manual system gun for adhesion liquid regurgitation which was made to stop with open and the close one of the valve portion 3 for adhesion liquid. Opening of the valve portion 3 for the above-mentioned adhesion liquid is carried out at the time of advance of a needle valve 2, and it is formed in the configuration which can be stopped at the time of retreat. The piston 7 which can slide to shaft orientations is connected with the posterior part of a needle valve 2 for the inside of the cylinder room 6 of the gun body 1. The spring 8 for piston retreat which presses this piston 7 back is formed. While forming this piston 7 and the separated rod 9 behind the above-mentioned piston 7 and forming the spring 12 for rod retreat which carries out the back HE press of this rod 9 The finger push section 10 for front press projected to gun body 1 back to the back end of this rod 9 is formed. Between this rod 9 and the gun body 1, it opens at the time of advance of a rod 9, and comes to prepare pressurization air in it the valve portion 11 for pressurization air which can flow into the above-mentioned cylinder room 6.

[0008]

In the above-mentioned configuration, it is desirable to form diaphragm in the middle part of the adhesion liquid feed hopper 13 and the cylinder room 6 as a seal means 14 between the gun body 1, a needle valve 2, or a piston 7.

In drawing, in 15, the valve seat of formation and 17 show pressurization air-suction-system opening to a needle valve 2, and, as for the valve sheet of formation, and 16, 18 shows the O ring of the valve portion 11 for pressurization air to the gun body 1 respectively.

[0009]

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## OPERATION

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### [Function]

b) When not applying adhesion liquid probably from the manual system gun for adhesion liquid regurgitation concerning this design, a needle valve 2 is in a retreat location by the force of the spring 8 for piston retreat. Therefore, the valve seat 16 of a needle valve 2 carries out the pressure welding of the valve portion 3 for adhesion liquid to the valve sheet 15 of the gun body 1, the closedown is carried out and the adhesion liquid 5 by which HE supply within the gun body 1 was carried out does not flow out of the adhesion liquid feed hopper 13 into the nozzle section 4. In addition, a rod 9 is also in a retreat location by the force of the spring 12 for rod retreat in this case, and since the closedown also of the valve portion 11 for pressurization air is carried out, the pressurization air inhaled from the pressurization air-suction-system opening 17 does not flow into the cylinder room 6, either (refer to drawing 1 ).

### [0010]

b) Next, what is necessary is just to push in with a finger the finger push section 10 of the rod 9 back end which carried out the back HE protrusion where the gun body 1 is grasped from this manual system gun for adhesion liquid regurgitation, when applying, the regurgitation [ adhesion liquid ], for a while.

### [0011]

Since the valve portion 11 for pressurization air which the rod 9 moved forward for a while now, and had been stopped at the time of this rod 2 retreat will open, the pressurization air which was flowing into the gun body 1 from the pressurization air-suction-system opening 17 passes this valve portion 11, and flows into the cylinder room 6, and with this pressurization air, the piston 7 in the cylinder room 6 resists the force of the spring 8 for piston retreat, and moves forward (refer to drawing 2 ). By advance of this piston 7, this piston 7 and the needle valve 2 of one move forward, by the valve portion 3 for adhesion liquid, a valve seat 16 will separate from the valve sheet 15, and this valve portion 3 carries out opening. Therefore, the adhesion liquid 5 currently supplied into the gun body 1 will pass this valve portion 3, and will be breathed out from the nozzle section 4 at a tip (refer to drawing 3 ).

### [0012]

When making adhesion liquid breathe out like the above, the actuation is stuffing the finger push section 10 of the rod 9 back end into the shaft-orientations front of the gun body 1 for a while with a finger. Therefore, from this gun, unlike what grasps the control lever of the conventional gun body lateral part in the shaft orientations and the direction of a right angle of a gun body, the nozzle section 4 of longitudinal direction HEZURE \*\*\*\*\* at a tip is lost, and adhesion liquid 5 is applied to a predetermined part with a sufficient precision.

### [0013]

c) What is necessary is just to loosen the force of pushing the finger push section 10 of the rod 9 back end, when making the regurgitation of adhesion liquid halt from this manual system gun for adhesion liquid regurgitation.

the valve portion 11 for pressurization air which was being opened now since the rod 9 retreated for a while by the force of the spring 12 for rod retreat -- \*\*\*\*\* -- it becomes things and pressurization air stops flowing into the cylinder room 6 Therefore, since a piston 7 retreats



according to the force of the spring 8 for piston retreat, this piston 7 and the needle valve 2 of one also retreat and the seat 16 carries out a pressure welding to the valve sheet 15, the valve portion 3 for adhesion liquid will stop, and the regurgitation of adhesion liquid 5 stops from the nozzle section 4.

[0014]

When stopping the regurgitation of the above-mentioned adhesion liquid, the closedown of the valve portion 3 for adhesion liquid is performed by retreat of the valve seat 16 by retreat of a needle valve 2. By retreat of this valve seat 16, since the negative pressure according to the cross section of a valve seat 16 arises between the valve portion 3 for adhesion liquid, and the nozzle section 4, it will be prevented that adhesion liquid 5 flows and falls from the nozzle section 4 with this negative pressure, the regurgitation stops immediately, and a liquid piece becomes good.

[0015]

While a seal becomes perfect to the needle valve 2 which is NI and which will slide at it if diaphragm is formed like the above as a seal means 14 between the gun body 1, a needle valve 2, or a piston 7 in the location between the adhesion liquid feed hopper 13 and the cylinder room 6, there is no wear like the conventional O ring, and endurance improves.

[0016]

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EXAMPLE

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[Example]

In the example shown by drawing 1 thru/or drawing 3 , the gun body 1 connects to the cylinder-tube part of posterior part approach, the bulb tube part of anterior part approach, the nozzle part of a point, etc. what carried out division formation, and has really used it as the object.

[0017]

On the other hand, although a needle valve 2 and a piston 7 carry out another object formation and the part which slides on the inside of the gun body 1 is connected, like the above, it dissociates with a piston 7 and the rod which has the finger presser-foot section 10 in the back end is prepared.

[0018]

the valve 11 for pressurization air forms the taper hole 19 which comes together cylinder room 6, comes out, and serves as a major diameter, and contacts the front end approach of the another side rod 9 at above-mentioned O ring 18 while it forms O ring 18 in the backside [ the cylinder room 6 within the gun body 1 ] -- the short cylinder section 20 of a major diameter is formed a little. At the time of retreat, the above-mentioned short cylinder section 20 contacted [ the rod 9 ] to O ring 18, and this operating state has stopped this valve 11 for pressurization air (refer to drawing 1 ). Since the major-diameter short cylinder section 20 separates [ a rod 9 ] from the location of O ring 18 at the time of advance, Gap s will be generated between rod 9 peripheral face and O ring 17 inner skin, this valve 11 for pressurization air will open, and pressurization air passes this valve 11, flows into the cylinder room 6 through the taper hole 19, and advances a piston 7 (refer to drawing 2 ).

[0019]

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The whole manual system gun for adhesion liquid regurgitation concerning this design is shown, and it is a vertical section front view at the time of a halt about the regurgitation of adhesion liquid.

[Drawing 2] The second half section of the manual system gun for adhesion liquid regurgitation of drawing 1 is shown, and it is an expansion vertical section front view at the time of the regurgitation about adhesion liquid.

[Drawing 3] The first portion of the manual system gun for adhesion liquid regurgitation of drawing 1 is shown, and it is an expansion vertical section front view at the time of the regurgitation about adhesion liquid.

[Drawing 4] The conventional whole manual system gun for adhesion liquid regurgitation is shown, and it is a vertical section front view at the time of a halt about the regurgitation of adhesion liquid.

[Description of Notations]

1-gun body 2-needle valve Valve portion for 3-adhesion liquid

4-nozzle section 5-adhesion liquid 6-cylinder room

7-piston Spring for 8-piston retreat 9-rods

10-fingers push sections Valve portion for 11-pressurization air Spring for 12-rods retreat

13-adhesion liquid feed hopper 14-seal means 15-valve sheet

16-valve seat 17-pressurization air-suction-system opening 18-O ring

19-taper hole 20-short cylinder section 21-control lever

Spring for 22-needle valve advance s-gap

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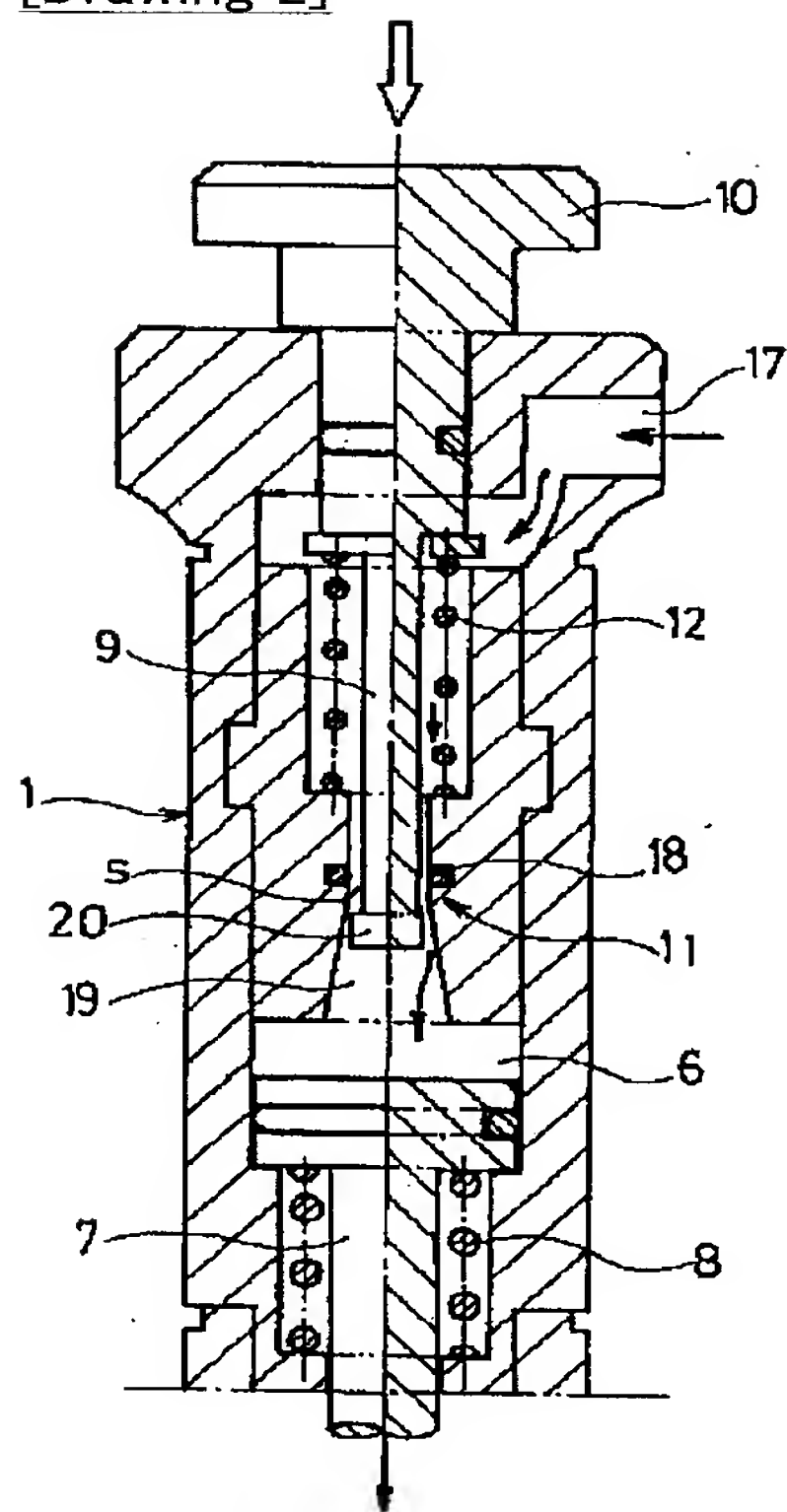
3.In the drawings, any words are not translated.

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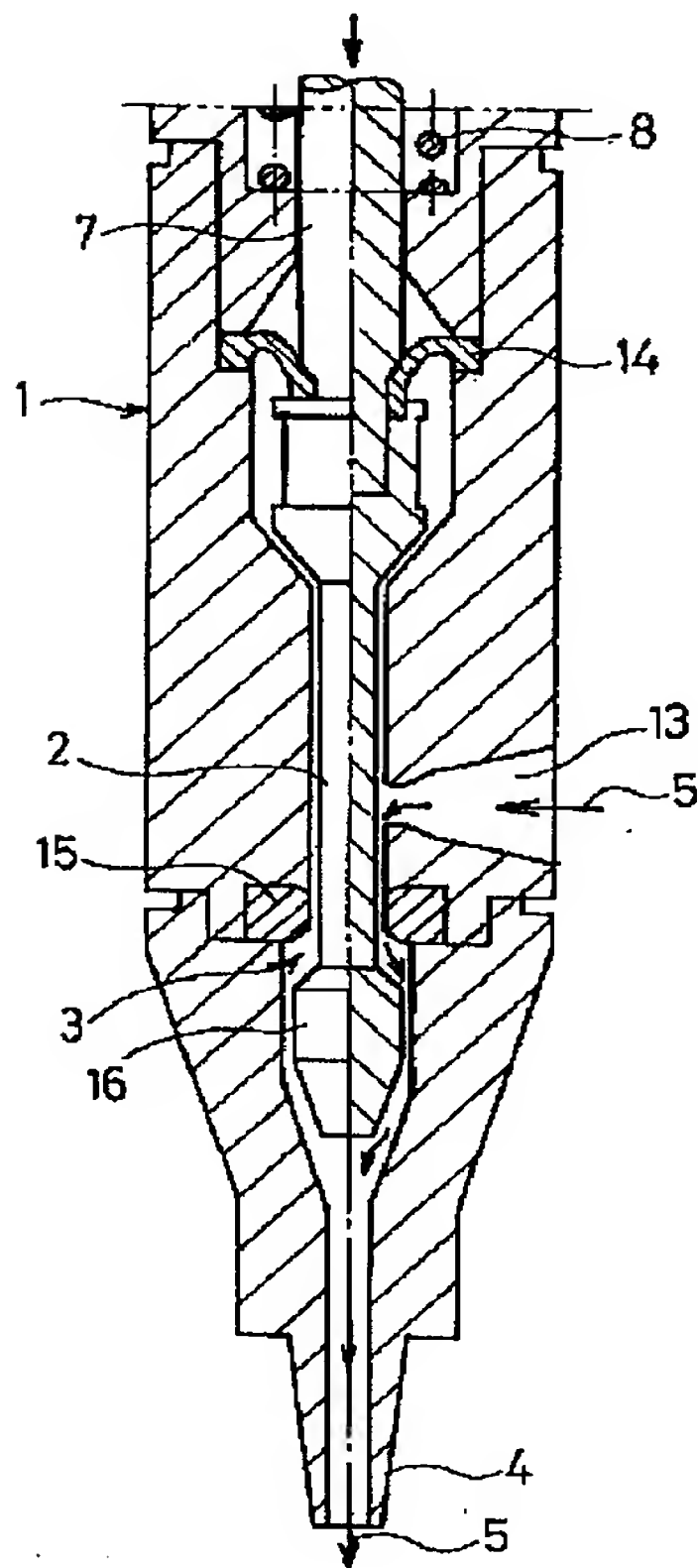
DRAWINGS

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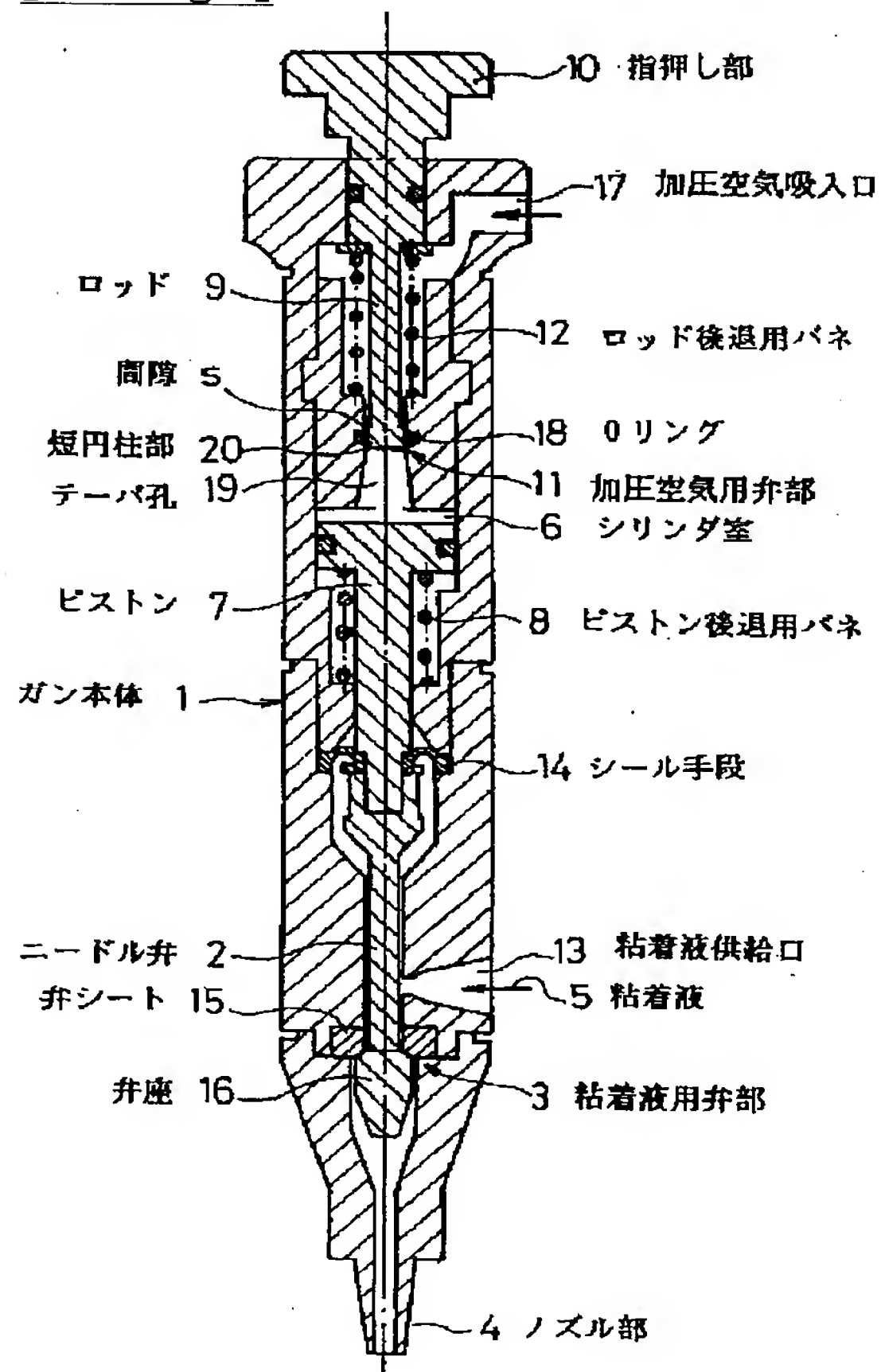
[Drawing 2]



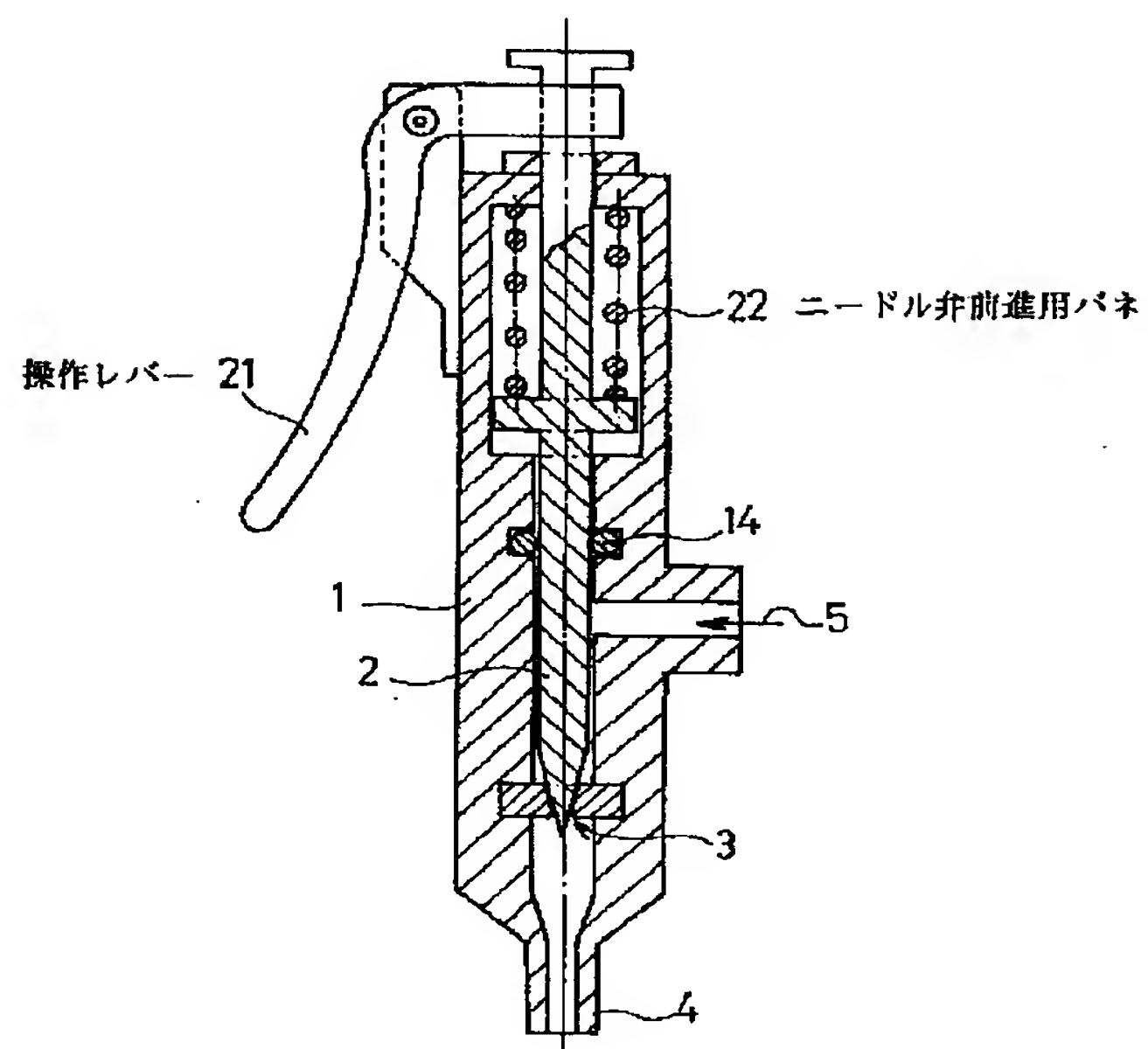
[Drawing 3]



[Drawing 1]



[Drawing 4]



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[Translation done.]